



# COMMUNITY SUMMIT

Dynamics 365  
Business  
Central (NAV)

October 11–15, 2026  
Gaylord Opryland Resort



The largest independent Microsoft AI & Business Applications User Conference on the planet.



# **| Practical data analysis tools for Business Central specialists**



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# | Renato Fajdiga



- Renato Fajdiga, Derecjun, Director of Business Products
- From Zagreb, Croatia.
- More than 10 years in Dynamics world in various roles.
- Business Apps lead.
- Microsoft MVP and MCT for Dynamics 365 Business Central.
- Speaker at various conferences and co-founder of BizSource User Group Croatia.



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# | Milan Milinčević



- 7+ years in Dynamics world in various roles.
- Leading BC development @ Enora
- Microsoft MVP for Dynamics 365 Business Central.
- Speaker at various conferences
- Co-founder of BizSource User Group Croatia.



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# Session agenda

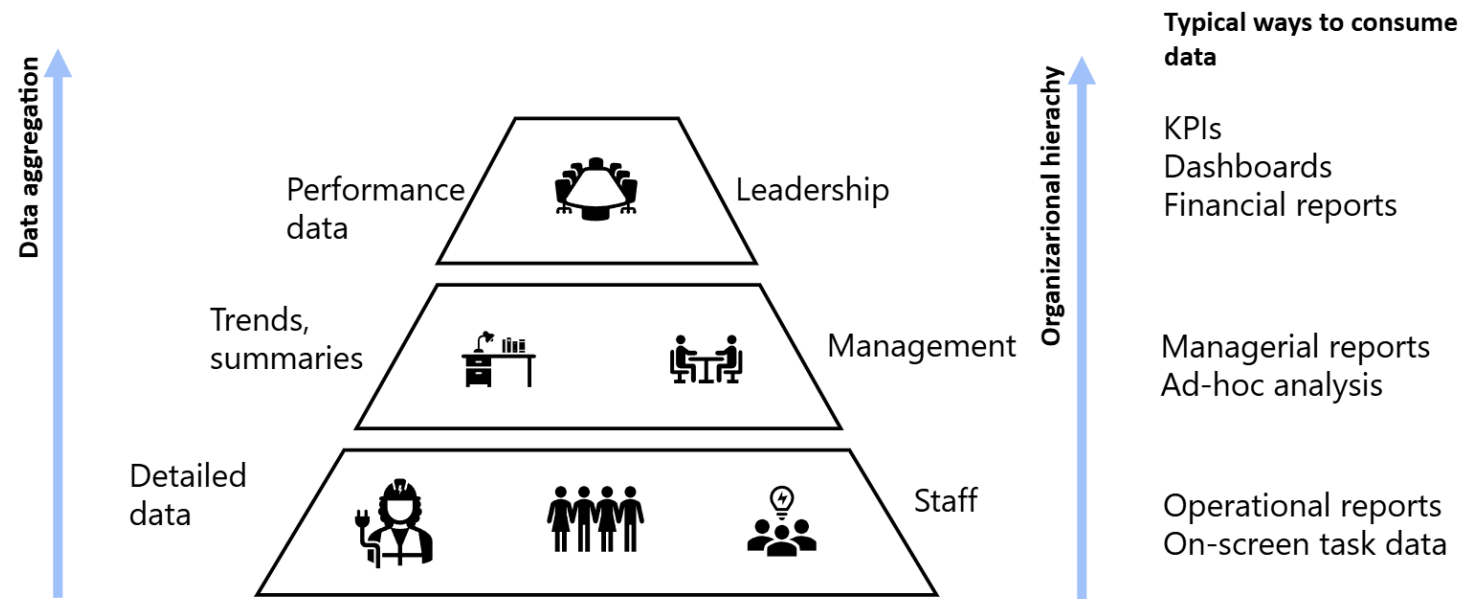


*Q&A at the end – questions during demos are welcome.*

# Organizational needs for reporting



- Every person in organization has different idea about reporting.
- Analytical needs vary from different roles and how data should be presented.
- Reporting can be from building sales invoice layout through Excel layout for data analysis to the advanced analytics in Power BI.
- Analytics is not only charts and dashboards.



# Who needs what?



| AUDIENCE                                                                                                   | THE QUESTION THEY ASK                    | WHAT THEY CONSUME                | BEST-FIT TOOLS                           |
|------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------|------------------------------------------|
|  Leadership               | <i>"Are we on track?"</i>                | KPIs, trends, scorecards         | Power BI apps, financial reports         |
|  Controllers & managers   | <i>"Why did margin drop this month?"</i> | Management packs, variances      | Financial reports, Excel layouts         |
|  Operational users        | <i>"What do I need to act on today?"</i> | Lists, documents, on-screen data | Standard reports, Analysis mode          |
|  Power users & analysts | <i>"Let me slice it myself."</i>         | Raw datasets, combined sources   | Queries, Open in Excel, Power BI Desktop |

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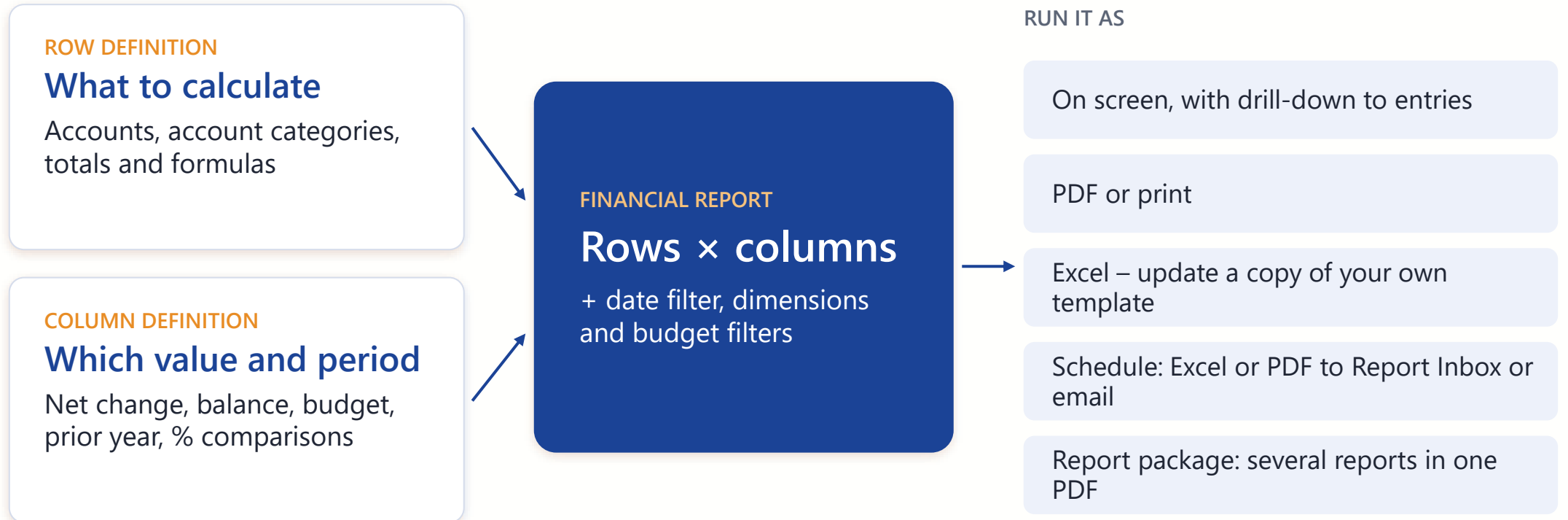


# | Built-in reports overview



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# Financial report anatomy



**Tip** The cleaner the chart of accounts and its account categories, the less logic you need in row definitions.

# Built-in reports overview: Financial Reports



- Financial Reports don't require any coding skills; HOWEVER it is important to pay attention on configuration and how chart of accounts is configured.
- Financial reports are user-defined reporting layer over CoA and G/L.
- Designing includes defining row and column definition. Row = what to calculate; Column = which value and period to show

| Row No. | Description                       | Totaling Type | Totaling | Row Type   | Amount Type | Show Opp... Sign         | Show | Bold                     | Italic                   | Und...                   | Dou... Und...            | New Page                 |
|---------|-----------------------------------|---------------|----------|------------|-------------|--------------------------|------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 11100   | 11100 Development Expendit...     | Posting Ac... | 11100    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11200   | 11200 Tenancy, Site Leasehold ... | Posting Ac... | 11200    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11300   | 11300 Goodwill                    | Posting Ac... | 11300    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11400   | 11400 Advanced Payments for ...   | Posting Ac... | 11400    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12110   | 12110 Building                    | Posting Ac... | 12110    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12120   | 12120 Cost of Improvements t...   | Posting Ac... | 12120    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12130   | 12130 Land                        | Posting Ac... | 12130    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12210   | 12210 Equipments and Tools        | Posting Ac... | 12210    | Net Change | Net Amount  | <input type="checkbox"/> | Yes  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Column No. | Column Header      | Include Date in Column Header | Column Type   | Ledger Entry Type | Amount Type   | Budget Name | Formula | Show Opp... Sign         | Comparison Date Formula | Show   | Rounding Factor | G/L Account Totaling | Show in ACY              |
|------------|--------------------|-------------------------------|---------------|-------------------|---------------|-------------|---------|--------------------------|-------------------------|--------|-----------------|----------------------|--------------------------|
| 1          | Beginning Balan... |                               | Beginning ... | Entries           | Net Amount    |             |         | <input type="checkbox"/> |                         | Always | None            |                      | <input type="checkbox"/> |
| 2          | Debits             |                               | Net Change    | Entries           | Debit Amo...  |             |         | <input type="checkbox"/> |                         | Always | None            |                      | <input type="checkbox"/> |
| 3          | Credits            |                               | Net Change    | Entries           | Credit Amo... |             |         | <input type="checkbox"/> |                         | Always | None            |                      | <input type="checkbox"/> |
| 4          | Ending Balance     |                               | Formula       | Entries           | Net Amount    |             | 1+2-3   | <input type="checkbox"/> |                         | Always | None            |                      | <input type="checkbox"/> |

←

Trial Balance (TB)

Home

Hide options

▼

Column

Period

Export to Excel/Print

Definitions

More options

Recalculate

Revert to defaults

Options

Name

TB

...

Date Filter

09/0

Display Title

Trial Balance

Internal Description

View by

Month

▼

Dimensions

Department Filter

...

Cash Flow Filter

...

Customergroup Filter

...

G/L Budget Filter

...

Cost Center Filter

...

Cost Budget Filter

...

Cost Object Filter

...

| Row No. | Description                           | Beginning Balance | Debits     |
|---------|---------------------------------------|-------------------|------------|
| → 14110 | 14110 Raw Materials                   | 14,115.50         | —          |
| 14120   | 14120 Products in Progress            | —                 | —          |
| 14130   | 14130 Finished Goods                  | 69,648.30         | 252,732.40 |
| 14140   | 14140 Goods for Resale                | 240.00            | 43,350.00  |
| 14160   | 14160 Advanced Payments for good...   | —                 | —          |
| 14170   | 14170 Other Inventory Items           | —                 | —          |
| 14210   | 14210 Work in Progress, Finished G... | —                 | —          |
| 14220   | 14220 WIP Job Sales                   | —                 | —          |

# Find before you build



# 300+

standard reports across  
finance, sales,  
inventory and  
operations

*Check the library before  
writing a single line of AL.*

1

## Search

Tell Me (Alt+Q) or Report Explorer – filter by functional area.

2

## Choose a layout

Report Layouts page: RDLC, Word or Excel. Set the default layout per report.

3

## Extend only the gap

New layout first, report extension next, a brand-new report last.

### EXCEL-READY FINANCE REPORTS TO SHOW CUSTOMERS

Aged Accounts Receivable Excel

Aged Accounts Payable Excel

Trial Balance/Budget Excel

Fixed Asset Analysis Excel

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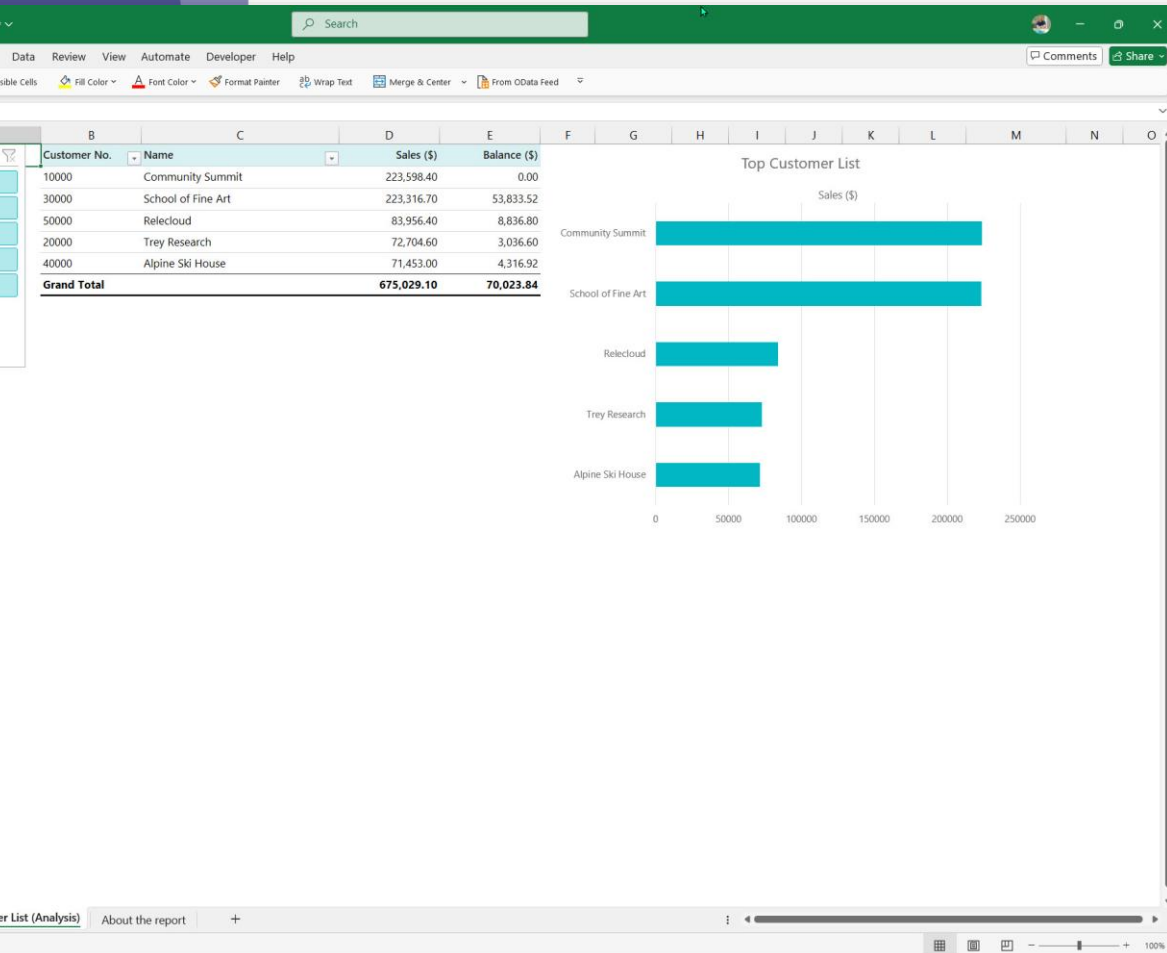


# | Excel Report Layouts (Custom Reports) & Excel Reporting



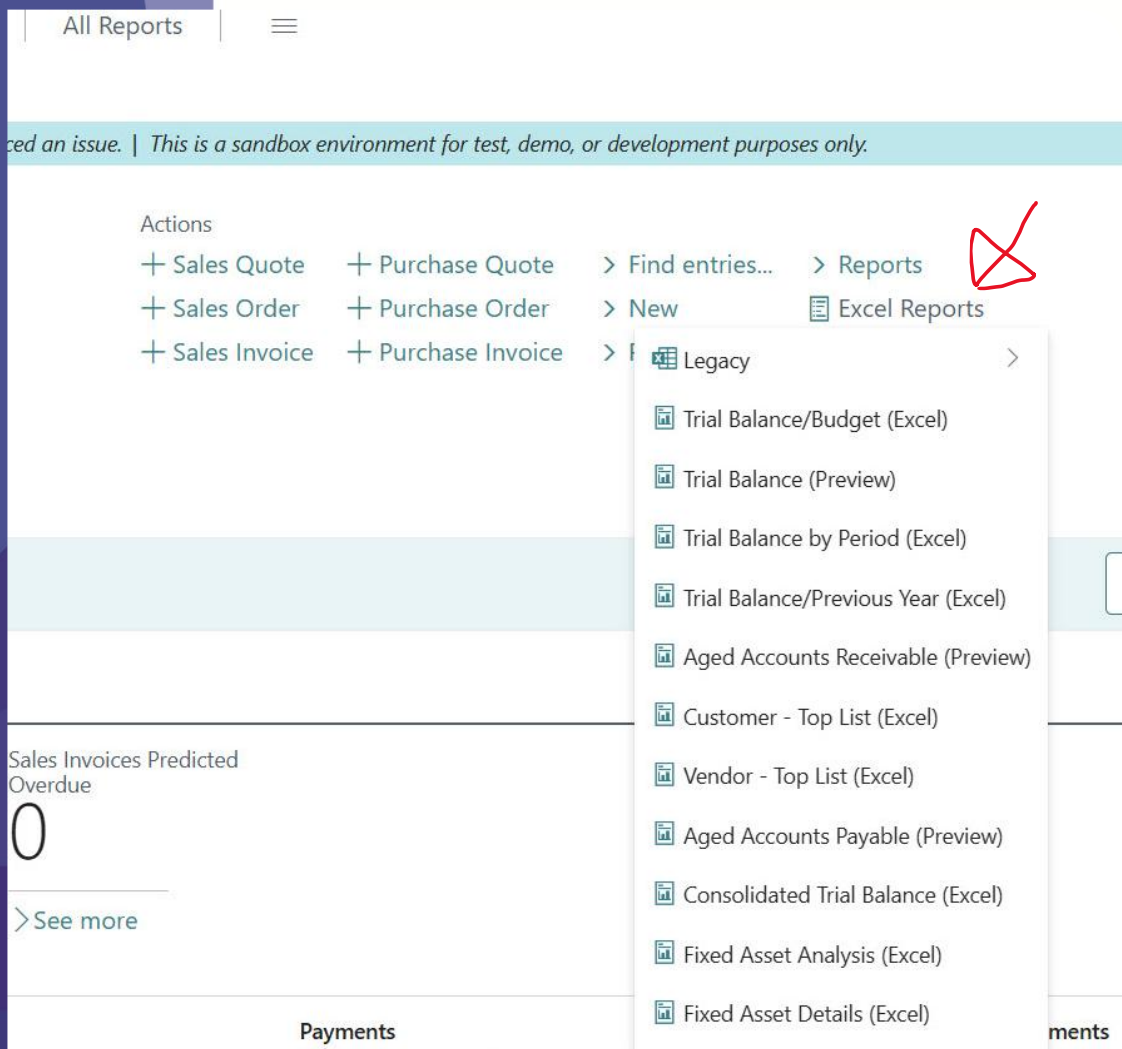
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# Excel Report Layouts (Custom Reports)



- Standard report layouts enriched with Excel workbooks.
- User can download report to .xlsx file format > no capabilities to print directly from Business Central UI.
- Pivot Tables, Dashboards, Power Query, connecting to other external data sources.
- Use for analytical needs where printing is not preferred way of showing data.
- Low / No code / function-based layout creation.
- Use Power Query for advanced scenarios.
- Create multiple sheets Excel workbook, interactive elements and visualizations, slices.
- Use advanced Excel features such as Copilot, Data analysis, integration with Power Automate, OneDrive, etc.

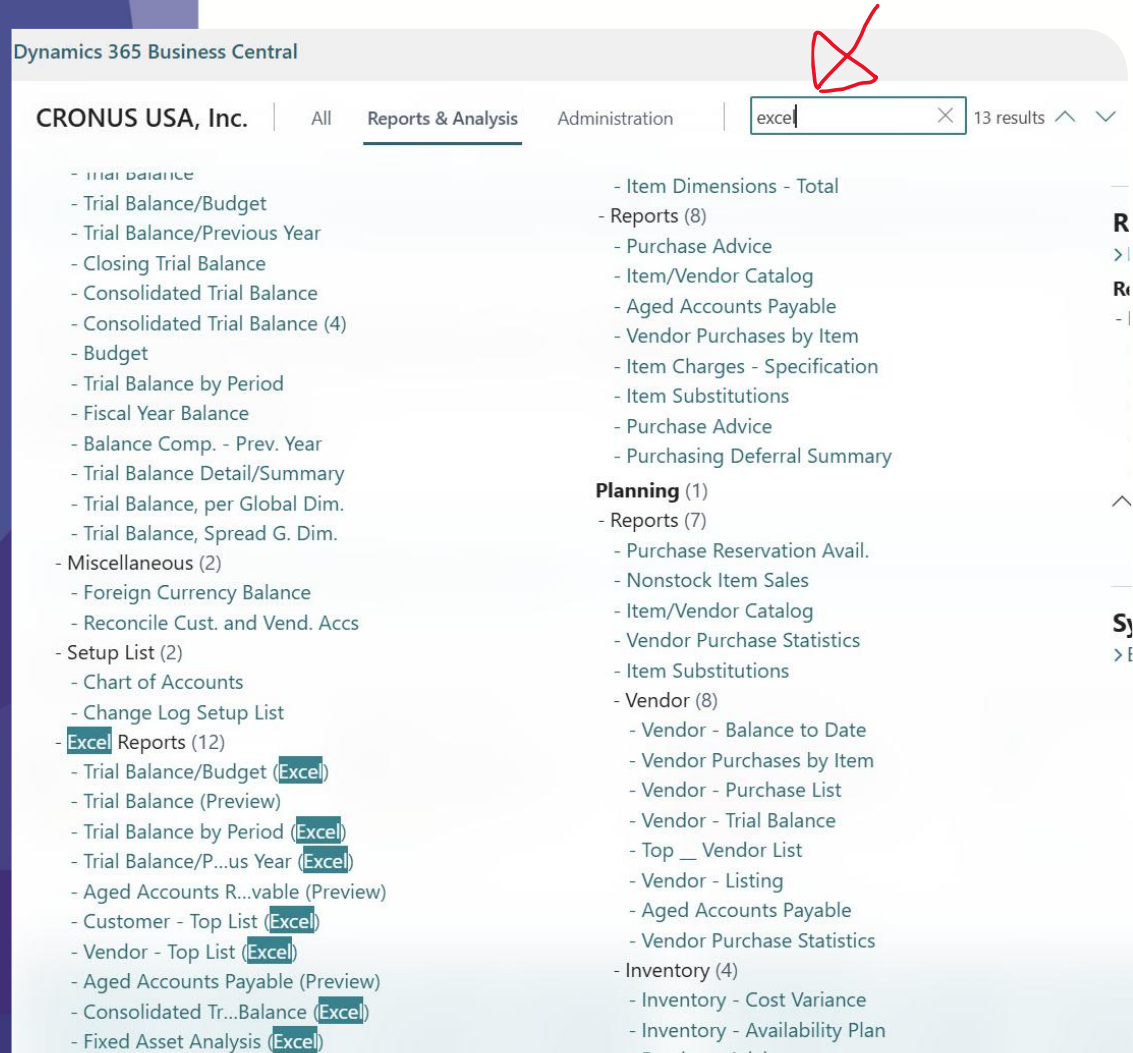
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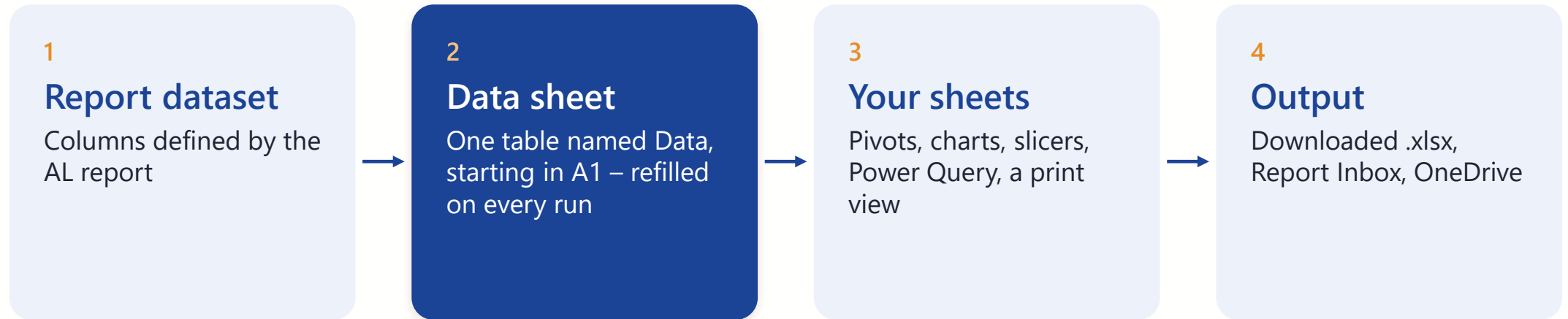
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# Excel layout anatomy



## Rules that keep a layout working

### Don't rename

the Data sheet, the Data table or its columns – that is how Business Central finds them.

### Hidden system sheets

TranslationData, CaptionData and Aggregated Metadata help with captions and languages.

# Pick the right layout



|                 | RDLC                                       | Word                              | Excel                                 |
|-----------------|--------------------------------------------|-----------------------------------|---------------------------------------|
| Best for        | Complex, pixel-precise documents           | Customer-facing documents         | Analysis and management packs         |
| Built by        | Developer (Report Builder / Visual Studio) | Consultant or key user, in Word   | Consultant or power user, in Excel    |
| Print from BC   | Yes                                        | Yes                               | No – the user downloads .xlsx         |
| Interactivity   | Static                                     | Static                            | Pivots, slicers, Power Query, Copilot |
| Typical example | Statements, labels, legacy reports         | Sales invoice, order confirmation | Aged receivables, sales by region     |

# | Open, edit or layout?



Vendor Ledger Entries

← Edit List Home Entry More options

Show Document Apply Entries Find entries... Create Payment Reverse Trans

Open in Excel  
Edit in Excel  
Share to Teams  
Copy link

| Posting Date<br>↓ | Document<br>Date | Document<br>Type | Document No. | External<br>Document<br>No. | Vendor No. ↓ | Vendor Name           |                |
|-------------------|------------------|------------------|--------------|-----------------------------|--------------|-----------------------|----------------|
| → 4/7/2025        | 4/7/2025         | Payment          | 108217       | 124GH68                     | 64000        | Hydropower            | 107212         |
| 4/7/2025          | 4/7/2025         | Invoice          | 108217       | 124GH68                     | 64000        | Hydropower Powerplant | Invoice 107212 |
| 3/11/2024         | 3/11/2024        | Invoice          | 108210       | 107202                      | 50000        | Nod Publishers        | Invoice 107202 |
| 3/10/2024         | 3/10/2024        | Invoice          | 108208       | 107200                      | 50000        | Nod Publishers        | Invoice 107200 |

# | Open, edit or layout?



## Open in Excel

A one-off copy of the list as you see it – columns and filters included.

### USE IT WHEN

You need a quick pivot or chart on today's data.

### WATCH OUT

Static snapshot – no refresh. Excel row limits apply.

## Edit in Excel

Excel add-in that reads records and publishes changes back.

### USE IT WHEN

Bulk updates of master data or journal lines.

### WATCH OUT

Every row runs Business Central validation. Test in a sandbox and control who can publish.

## Excel layout

A report layout users run from Business Central, with request-page filters.

### USE IT WHEN

The same analysis is needed every week or month.

### WATCH OUT

Keep the Data sheet structure intact (previous slides).

Once the data is in Excel, **Copilot and Agent Mode in Excel** can clean, transform and summarise it.

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# | Demo 1: Exploring reports in Business Central



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# | Analysis mode (Ad-Hoc Data analysis in Business Central)



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# Analysis mode in 5 steps



1

## Open a list or query

Pre-filter with views – analysis starts from those filters



2

## Enter analysis mode

The action bar switches to analysis tools



3

## Shape the tab

Group rows, pivot columns, add totals and filters



4

## Keep it

Tabs stay until you delete them – add as many as you need



5

## Share it

Copy a link for colleagues, or export the definition as JSON

### Before you start

- Works on list pages and query objects
- Permission sets: DATA ANALYSIS - EXEC (+ ADD RELATED FIELDS)
- Link recipients need access to the company and the data

### New in recent releases

- Microsoft ships read-only analysis tabs on key lists in Sales, Finance, Inventory and Purchasing – copy one and adapt it
- Analysis views can be packaged in an extension. Milan will show you how

# Analysis mode anatomy



| Document No. | External No. | Vendor No. | Vendor Name          | Description    | Original            | Amount              |
|--------------|--------------|------------|----------------------|----------------|---------------------|---------------------|
| 108008       | 108216       | 40000      | Wide World Importers | Invoice 107221 | -39850              | -39850              |
| 108210       | 107202       | 50000      | Nod Publishers       | Invoice 107202 | -14895.76           | -14895.76           |
| 108070       | 107062       | 50000      | Nod Publishers       | Invoice 107062 | -14895.76           | -14895.76           |
| 108022       | 107014       | 40000      | Wide World Importers | Invoice 107014 | -14338.62           | -14338.62           |
| 108213       | 107205       | 40000      | Wide World Importers | Invoice 107205 | -13863.53           | -13863.53           |
| 108197       | 107189       | 50000      | Nod Publishers       | Invoice 107189 | -12413.13           | -12413.13           |
| 108095       | 107087       | 50000      | Nod Publishers       | Invoice 107087 | -12413.13           | -12413.13           |
| 108057       | 107049       | 50000      | Nod Publishers       | Invoice 107049 | -12413.13           | -12413.13           |
| 108082       | 107074       | 50000      | Nod Publishers       | Invoice 107074 | -11585.59           | -11585.59           |
| 108200       | 107192       | 40000      | Wide World Importers | Invoice 107192 | -11552.94           | -11552.94           |
| 108073       | 107065       | 40000      | Wide World Importers | Invoice 107065 | -11552.94           | -11552.94           |
| 108060       | 107052       | 40000      | Wide World Importers | Invoice 107052 | -11552.94           | -11552.94           |
| 108044       | 107036       | 50000      | Nod Publishers       | Invoice 107036 | -10758.05           | -10758.05           |
| 108123       | 107115       | 40000      | Wide World Importers | Invoice 107115 | -10397.65           | -10397.65           |
| 108098       | 107090       | 40000      | Wide World Importers | Invoice 107090 | -10397.65           | -10397.65           |
| 108085       | 107077       | 40000      | Wide World Importers | Invoice 107077 | -10397.65           | -10397.65           |
| 108120       | 107112       | 50000      | Nod Publishers       | Invoice 107112 | -9102.96            | -9102.96            |
| 108184       | 107176       | 50000      | Nod Publishers       | Invoice 107176 | -8275.42            | -8275.42            |
| 108107       | 107099       | 50000      | Nod Publishers       | Invoice 107099 | -8275.42            | -8275.42            |
| 108187       | 107179       | 40000      | Wide World Importers | Invoice 107179 | -8087.06            | -8087.06            |
| 108148       | 107140       | 40000      | Wide World Importers | Invoice 107140 | -8087.06            | -8087.06            |
| 108136       | 107128       | 40000      | Wide World Importers | Invoice 107128 | -8087.06            | -8087.06            |
| 108110       | 107102       | 40000      | Wide World Importers | Invoice 107102 | -8087.06            | -8087.06            |
| 108034       | 107026       | 40000      | Wide World Importers | Invoice 107026 | -8087.06            | -8087.06            |
| 108145       | 107137       | 50000      | Nod Publishers       | Invoice 107137 | -7887.06            | -7887.06            |
| 108145       | 107137       | 50000      | Nod Publishers       | Invoice 107137 | -105831.55000000002 | -105831.55000000002 |

Vendor Ledger Entries in analysis mode

- 1 Tabs**  
Several analyses on one dataset
- 2 Data area**  
Group, sort and pivot like a PivotTable
- 3 Analysis filters**  
Narrow the data on top of page filters
- 4 Copilot**  
Describe the layout you want
- 5 Columns**  
Fields, row groups, pivot columns
- 6 Totals**  
Row count and aggregated values

# Analysis assist (Copilot)



## HOW IT WORKS

- 1 Copilot > Analyze list – or Create new analysis inside analysis mode
- 2 Describe the layout you want; the prompt guide helps
- 3 Generate, then Adjust with follow-up instructions
- 4 Keep it or Discard – Back/Next compares versions

## PROMPTS THAT WORK

*Show average unit cost per item category*

*Show vendors by country, sorted by number of purchases*

*Pivot sales amount by month, salespeople in rows*

*Only open entries – total per customer, largest first*

**Copilot arranges the data – it does not draw conclusions.** Admins switch it on with the Analyze list capability (Copilot & agent capabilities page).

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# | Demo 2: Analysis mode in Business Central



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# | Analysis views as a PTE



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# Package the view in AL



1

**Design in the client**

Analysis mode is the editor

2

**Export definition**

Tab menu gives a .analysis.json

3

**Add it to the project**

Next to your AL objects

4

**Reference it in AL**

analysisviews on a page or extension

5

**Compile and publish**

A locked tab for every user

## AL · the whole extension

```
pageextension 91100 "ILE Analysis" extends "Item Ledger Entries"
{
    analysisviews
    {
        addlast
        {
            analysisview(InventoryByLocation)
            {
                Caption = 'Inventory by location';
                DefinitionFile = 'src/InventoryByLocation.analysis.json';
            }
        }
    }
}
```

## What you ship

- No code, no triggers, no tables: one object and one JSON file
- Everyone with the app gets the same view, in every company
- Plain-text JSON: history, diffs and code review for layouts
- Needs 2026 wave 1 (v28, runtime 17) or later

# Who gets the view



## page

Everyone using your new page.

### USE IT WHEN

You own the page and ship the view with it.

## pageextension

Everyone with the app installed.

### USE IT WHEN

It's a company-wide standard – our demo.

## pagecustomization + profileextension

Only users with a specific role or profile.

### USE IT WHEN

The view is role-specific, e.g. only for the Order Processor.

## What users experience

- Locked icon on the tab: read-only, identical for every user
- Duplicate it and change the copy – a template to start from
- Can't be deleted or moved; survives personalization resets
- Hide it via Designer (all), Personalization (me) or Profile configuration (role)

## Tips

- Hide views Microsoft or other apps ship:  
`modify("Expected sales volume") {  
 Visible = false; }`
- Set Caption and ToolTip – users see the tooltip when hovering the tab; it matters once an app ships several views

# Views: tips and gotchas



## TIPS

- 1 **Keep filters generic.** Open = Yes is safe; customer, item or location values may not exist in the next company. Ship the layout, not data.
- 2 **Design for pivot mode.** Row groups take text, date and code fields; values take numbers. Pivot on fields with few distinct values or the browser freezes.
- 3 **Date hierarchies are free.** Every Date field gets Year / Quarter / Month – calendar, not fiscal; not DateTime.
- 4 **Related-table columns (26.2+).** Add columns from... needs ADD RELATED FIELDS; calculated fields are then hidden.
- 5 **Re-export after schema changes.** A removed or renamed field drops its column silently; the view loads incomplete.

**Share without code:** Copy link (choose 'Do not link to a specific company') or Bookmark view on the Role Center menu (2026 wave 2). Package when you want a governed standard.

## GOTCHAS

### List pages only

Pages, extensions and customizations of type List (AL0898). No indented lists such as Chart of Accounts.

### Permissions still apply

Users need DATA ANALYSIS - EXEC. A packaged view never shows more than the user's permissions allow.

### Over 100,000 rows

Large-dataset mode: calculated fields disappear, decimals show 2 places, dates show as YYYY-MM-DD.

### Pages can opt out

A developer can switch analysis mode off with AnalysisModeEnabled = false.

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# | Demo 3: Analysis views as a PTE



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# | Advanced Queries for Custom Data Sets



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# Advanced Queries for Custom Data Sets



```
Queries > AL PurchaseDocuments.Query.al > Query 50108 PurchaseDocumentsQuery > {} PurchaseHeader: Table 38 "Purchase Header"
1 reference
1 query 50108 PurchaseDocumentsQuery
2 {
3     QueryType = Normal;
4     AboutText = 'This query will query all Purchase orders and Purchase Invoices and their lines';
5     AboutTitle = 'Purchase Order and Invoice and Lines Query';
6     DataAccessIntent = ReadOnly;
7     UsageCategory = ReportsAndAnalysis;
8     QueryCategory = 'Purchase Orders and Purchase Invoices';
9     Caption = 'Purchase Orders and Invoices Query';
10
11     elements
12     {
13         2 references
14         {
15             0 references
16             column(DocumentType; "Document Type") ...
17             0 references
18             column(No; "No.") ...
19             0 references
20             column(DocumentDate; "Document Date") ...
21             0 references
22             column(DueDate; "Due Date") ...
23             0 references
24             column(ExpectedReceiptDate; "Expected Receipt Date") ...
25             0 references
26             column(OrderDate; "Order Date") ...
27             0 references
28             column(PostingDate; "Posting Date") ...
29             0 references
30             column(VendorOrderNo; "Vendor Order No.") ...
31             0 references
32             column(VendorInvoiceNo; "Vendor Invoice No.") ...
33             0 references
34             column(BuyfromVendorName; "Buy-from Vendor Name") ...
35             0 references
36             column(BuyfromVendorNo; "Buy-from Vendor No.") ...
37             0 references
38             column(PaytoVendorNo; "Pay-to Vendor No.") ...
39             0 references
40             dataitem(PurchaseLine; "Purchase Line")
41             {
42                 DataItemLink = "Document Type" = PurchaseHeader."Document Type", "Document No." = PurchaseHeader."No.";
43                 SqlJoinType = InnerJoin;
44                 0 references
45                 column(LineNo; "Line No.")
46                 {
47                     }
48                 0 references
49                 column(Quantity; Quantity)
50                 {
51                     }
52                 0 references
53                 column(QuantityInvoiced; "Quantity Invoiced")
54                 {
55                     }
56                 0 references
57                 column(QuantityReceived; "Quantity Received")
58             }
59         }
60     }
61 }
```

- Used to retrieve data from one or multiple tables without complex reporting coding.
- Queries can be published as OData feeds or consumed in Business Central client.
- e.g. combining sales orders, shipments, invoices into one dataset for end-to-end lifecycle scenario.
- Queries are read only meant for data analysis or integrations – not for data updates.
- A single query can be utilized across multiple reports, pages and purposes

# A query as a page



## AL · query 91100 Customer Item Sales (excerpt)

```
query 91100 "Customer Item Sales"
{
  UsageCategory = ReportsAndAnalysis;    // Tell Me + Role Explorer
  AboutTitle = 'About Customer Item Sales';
  AboutText = 'See what each customer buys ...';
  DataAccessIntent = ReadOnly;           // read-only replica
  elements
  {
    dataitem(ValueEntry; "Value Entry")
    {
      DataItemTableFilter = "Item Ledger Entry Type" = const(Sale);
      column(PostingYear; "Posting Date") { Method = Year; }
      column(Qty; "Invoiced Quantity") { Method = Sum; ReverseSign = true; }
      column(SalesAmount; "Sales Amount (Actual)") { Method = Sum; }
      dataitem(Customer; Customer)
      {
        DataItemLink = "No." = ValueEntry."Source No.";
        SqlJoinType = InnerJoin;           // default: LeftOuterJoin
      }
    }
  }
}
```

## WHAT TO POINT OUT

- 1 **Found in Tell Me.** UsageCategory lists it in Tell Me and the Role Explorer – no page object needed (BC 23+).
- 2 **Teaching tip.** AboutTitle + AboutText say where the numbers come from. Set both; RunObject actions reuse them.
- 3 **SQL does the work.** Method = Year / Month / Sum / Count in one statement; ReverseSign makes stored negatives positive.
- 4 **Joins.** An inner join hides entries without a match – say it out loud; it's the classic 'numbers don't match' question.
- 5 **Analysis mode works on queries.** Pre-aggregated rows stay far below the 100,000-row limit.

**Open it** from Tell Me, from an action with RunObject = query, or by URL: ...?company=CRONUS&query=91100. Rule of thumb: if the question starts with 'total X per Y per Z', it's a query.

# | The Integer trick



## AL · report dataitem reading query Q

```
dataitem(SalesLine; Integer)
{
  DataItemTableView = sorting(Number);
  column(SalespersonCode; Q.SalespersonCode) { }
  column(SalesAmount; Q.SalesAmount) { }
  column(Profit; Profit) { }           // calculated in AL
  trigger OnPreDataItem()
  begin
    Q.SetRange(PostingDateFilter, StartDate, EndDate); // request page
    Q.SetFilter(SalespersonCode, SalespersonFilter);
    Q.Open();
  end;
  trigger OnAfterGetRecord()
  begin
    if not Q.Read() then
      CurrReport.Break();           // no more rows
    Profit := Q.SalesAmount - Q.CostAmount;
  end;
}
```

## WHY BUILD REPORTS THIS WAY

### Performance

One SQL statement with JOINS and GROUP BY instead of nested loops: seconds, not minutes.

### Less data, flat output

Only aggregated rows come back – ideal for an Excel layout users pivot themselves.

### Calculate what SQL can't

No column arithmetic in queries: add Profit and Profit % in OnAfterGetRecord.

### Reusable and read-only

One query feeds pages, APIs and Power BI; DataAccessIntent = ReadOnly uses the replica.

**Excel layout:** Type = Excel generates the workbook with its Data sheet and table – don't rename them. Add Summary sheets, pivots and charts; key users re-upload via Report Layouts. Not for document reports.

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# | Demo 4: Using queries for reporting needs



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# | MCP for Reporting & Data queries



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# BC's native MCP server



## What it is

- **Built in:** mcp.businesscentral.dynamics.com – BC online only, no on-prem
- **Any MCP client:** Copilot Studio, VS Code, Claude, ChatGPT
- **Runs as the signed-in user:** OAuth 2.0 + Entra ID, normal BC permissions, normal audit trail. No service account, no API key
- **Out of the box:** read API pages and queries; with a configuration it can also create records and invoke actions
- **Configured on page 8350** MCP Server  
Configurations: validate, activate, export as JSON

## THREE SERVER FEATURES – TURN ON WHAT YOU NEED

### API Tools **Demo 5, part 1**

One tool per allowed operation on an API page or query: List\_reports, Create\_reportRunRequest, run\_reportRunRequests...

### Dynamic Tool Mode **Optional**

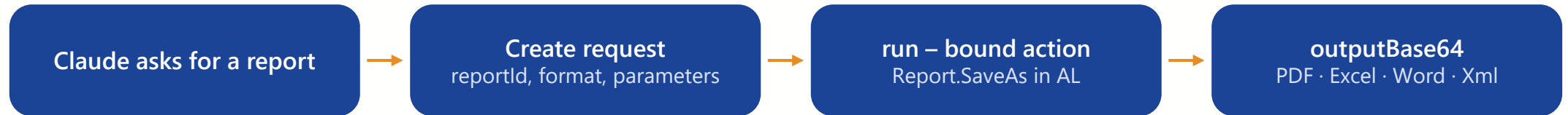
Three generic tools (search / describe / invoke) instead of one per object – works around client tool limits, e.g. 70 in Copilot Studio

### Data Query Tools (preview) **Demo 5, part 2**

The agent writes an AL query, BC compiles and validates it, rows come back. Read-only, no deployment

**Terminology trap:** Dynamic Tool Mode is about tool discovery; Data Query Tools are about ad-hoc queries. Two different things.

# Reports through MCP



WHAT WE BUILT – ONE SMALL APP

## Table Report Run Request

One record per run: report, format, parameters, result, status, error, who, when. State, audit and retry for free.

**PDF** rendered layout – 'send me the report'

## API page reportRunRequests

POST creates a request; bound action run executes it. runImmediately = true does both in one call.

**Excel** Summary + Data sheets – 'I want to pivot it'

## API page reports

The catalog of reports Claude may run, each with a ready-made request-page XML template.

**Word** editable documents

## Codeunit Report Runner

Allow-list check, Report.SaveAs in a TryFunction, errors captured as data.

**Xml** dataset only – 'just answer my question'

**Why an API page with a bound action:** API pages and queries are the strategic surface, and MCP's Allow Actions maps directly to bound actions.

# MCP: tips and gotchas



## TIPS

- 1 **Describe your entities.** Claude picks tools from names and descriptions; EntityCaption even becomes part of the tool name.
- 2 **Catalog + template, not a free integer.** The allow-list stops 'run report 1306'; the XML template takes the guesswork out of request pages.
- 3 **Return the result in the same response.** outputBase64 is computed in OnAfterGetRecord – no streams, no second call.
- 4 **Catch errors as data.** Report.SaveAs in a TryFunction: status = Failed + errorMessage instead of HTTP 500, so Claude can fix its parameters.
- 5 **Dataset XML is the chat format.** Smaller than a PDF and Claude reasons over it directly. Keep the MCP configuration export in the repo.

**Also:** only top-level API pages become tools (no ListPart / CardPart). Report.SaveAs with a layout the report doesn't have – PDF from an Excel-only report – fails and lands in errorMessage.

## GOTCHAS

### BC online + Entra app registration

Claude and ChatGPT need a registered Entra app (delegated Financials.ReadWrite.All); no dynamic client registration.

### Permissions still apply

No execute permission on report 111 in the client means none through Claude either. That's a feature.

### Data Query Tools are preview

Read-only, may change, not enabled in every environment – check page 8350 before the demo.

### Tool-result size

Prefer Xml for data questions. For large PDFs, schedule the report and read it through the Report Inbox API (v29).

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# | Demo 5: Reports and queries through MCP



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# | Power BI Dashboards

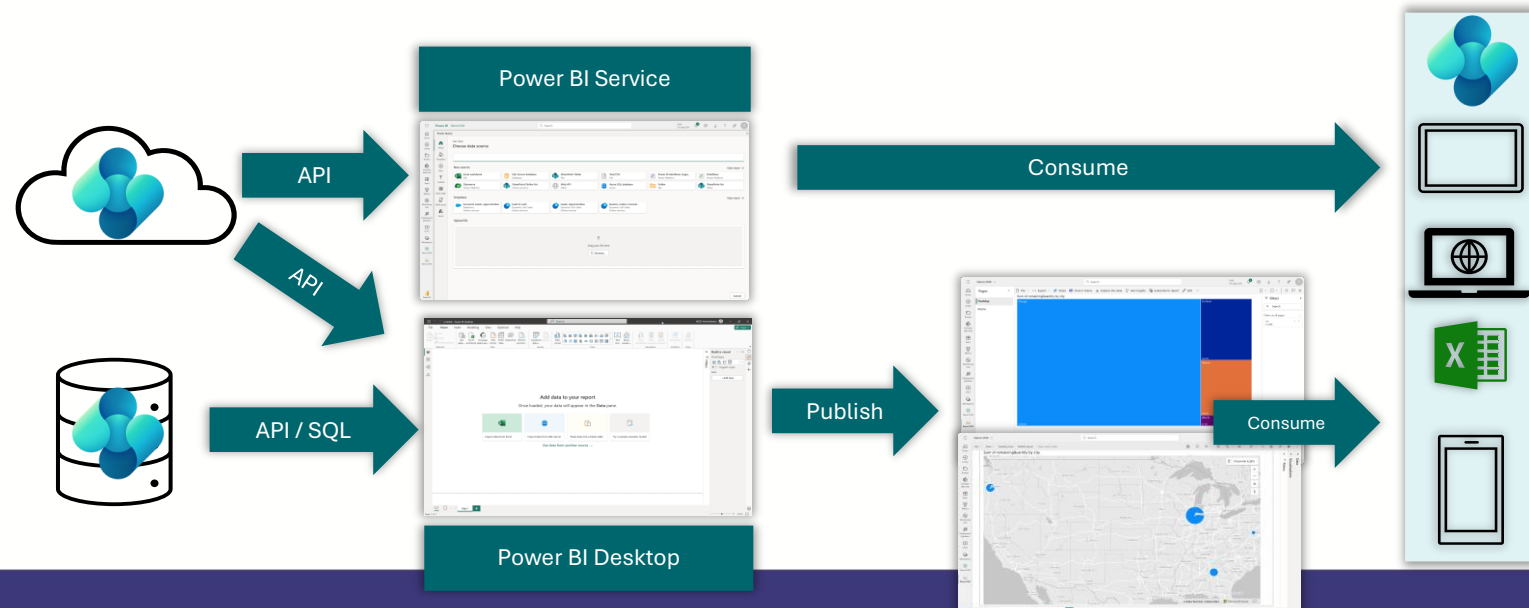


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# | Power BI Dashboards



- Use standard out-of-the box Power BI reports or start with blank canvas.
- Addressing specific customer needs.
- Combining multiple data sources or building reports on top of legacy ERP together with Business Central.
- Download PBIX file and extend out of the box Power BI apps.
- Start from scratch with Power BI Desktop or Power BI Service.
- Consultants can easily prototype and adjust reports during client meeting.



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# | Power BI apps for BC



Finance



Sales



Purchasing



Inventory



Inventory  
valuation



Manufacturing



Projects



Subscription  
billing



Sustainability

## What to know

- Two parts: a connector app (preinstalled in BC) and a template app from Microsoft Marketplace
- One app per company; online environments only
- Installing needs Power BI Pro; users need a paid Power BI licence
- Source .pbix files are available – extend instead of starting blank
- Reports can be embedded on Role Centers

# | Choose your data path



*More control, more effort →*

## 1 · USE

### Power BI apps

Ready-made reports for nine functional areas

Effort: hours

## 2 · EXTEND

### Customise the .pbix

Add your KPIs to Microsoft's semantic model

Effort: hours/days

## 3 · BUILD

### Your own model

Power BI Desktop on BC API pages and query objects

Effort: weeks

## 4 · SCALE

### Fabric / data lake

Large volumes, many companies, external sources

Effort: project

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# **| Demo 6: Exploring Power BI capabilities with Business Central**



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# | Report telemetry



## Which reports are actually used?

Count RT0006 events per report and per action – preview, print, download, schedule.

## Which layouts win?

layoutType and documentFormat show Excel vs Word vs RDLC adoption.

## What is slow or failing?

totalTime, sqlRowsRead and result; RT0007 shows cancelled runs.

KQL · most-used reports, last 30 days

```
traces
| where timestamp > ago(30d)
| where customDimensions.eventId == "RT0006"
| extend report = tostring(
    customDimensions.alObjectName),
    layout = tostring(
    customDimensions.layoutType)
| summarize runs = count()
    by report, layout
| order by runs desc
```

*Financial reports also log their own usage telemetry and audit logs.*

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# **| Demo 7: Telemetry for Business Central Reports**



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# | Which tool when?



IF YOU NEED...

REACH FOR...

A standard document or statement



Built-in report (Word / RDLC)

P&L, balance sheet, G/L-based KPIs



Financial reports

The same analysis every month, reshaped by users



Excel layout

A quick answer from a list, no setup



Analysis mode + Copilot

Data joined from several tables



Query object

Visuals for leadership, many sources



Power BI

A one-off calculation



Open in Excel

# Key takeaways



01

## Start from the question

Match the tool to who is asking – not to the tool you know best.

02

## Search before you build

300+ standard reports – add a layout before writing a new report.

03

## Let Excel people use Excel

Excel layouts give users design freedom on data Business Central controls.

04

## Analysis mode is the quick win

Pivot any list in seconds; Copilot builds the layout from a sentence.

05

## Queries make it reusable

One query feeds analysis mode, reports, APIs and Power BI.

06

## Measure what is used

Report telemetry shows which reports and layouts people actually run.

**Try it tomorrow** > Rebuild one list your users export to Excel every week as an analysis tab – and share the link.

# | Q & A



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**Thank you for  
attending! 🙏**



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